Alcatel **OmniStack 6100 Series**

Convergence Ready, Stackable Workgroup Switches

The OmniStack 6124 and 6148 are the new low-cost, stackable additions to the Alcatel OmniStack workgroup switch family. OmniStack 6124 and 6148 were designed specifically for enterprises building next generation networks that support data, voice, and video.

The OmniStack 6124 and 6148 base units protect your investment because they interoperate with all existing Ethernet and Fast Ethernet equipment and cabling. With these switches, workgroup networks can be upgraded for higher performance, simply and cost-effectively with minimum disruption.

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Where Does the OmniStack Fit Into Your Network?

The OmniStack 6124 and 6148 offer 10/100 switching for workgroups in medium to large networks. With workstations or hubs connected directly to the switch, the OmniStack 6124 and 6148 perform powerful layer-2 switching at the edge of the network.

With wire-speed performance and a wide range of high speed uplink options, these 24 or 48-port Ethernet switches redefine stackability. Each unit supports 802.1Q, 802.1p, port aggregation, and IP multicast switching. The OmniStack 6124 and 6148 offer a flexible, full feature set with advanced QoS capabilities that protect your network investment as it evolves and grows with:

- **Best price in its class**
- **Powerful stacking architecture**
  - Flat price per port – pay as you grow
  - High-performance, true stackable solution – stacking modules allow up to 172 ports in a mixed OS-6124 and OS-6148 stack
  - High bandwidth between units
- **Support voice and data integration**
  - High availability
    Redundant power supply (RPS)
    Distributed switching fabric
    Redundant stacking module
    Redundant network management module
  - Bandwidth management
    Supports traffic allocation to CoS based on 802.1p and DSCP[1]
    IP multicast switching (IGMP snooping)
    VLAN support (802.1Q)
  - Congestion control – flow control (back pressure 802.3x)
- **Wire-speed switching**

Backbone connectivity – The OmniStack 6124 and 6148 connect to the core of the network via Fast or Gigabit Ethernet uplinks. With port aggregation, the uplink's bandwidth can be increased in increments of up to four Gbps without disruption.

The OmniStack 6124 and 6148 also support 10/100/1000BaseT, 1000BaseSX, 1000BaseLX, and 1000BaseLH Gigabit Ethernet ports to connect to a gigabit core switch. The long haul interfaces (1000BaseLX and 1000BaseLH) are used on large campuses to link distant buildings. The short haul interfaces (1000BaseSX) are used as vertical connections within a building.

OmniStack 6100 layer-2 switching at the edge can be combined with other Alcatel products including the OmniSwitch 7000 in the core with its layer-2/3/4 classification – simplifying network complexity and minimizing overall network costs.

Features

The OmniStack 6124 and 6148 are cost-effective, feature-rich L2 workgroup switches. Their powerful stacking architecture offers scalability from 24 to 172 ports. A comprehensive feature set and wide variety of uplinks means flexibility that allows you to build a network infrastructure ready for data and voice integration. In addition, it is fully compatible with Alcatel OmniSwitch, Omni Switch/Router, OmniCore, and OmniAccess switching products.

[1] Release 3.1

- Base unit has 24 or 48 (10/100 Mbps) Fast Ethernet switch ports
- 10/100/1000BaseT autosensing uplink
- 10BaseT/100BaseTX ports provide auto-negotiation for speed and duplex mode selection
- Optional dual-port Fast Ethernet fiber modules and single-port GE modules provide flexible high-performance connectivity to backbone networks
- Supports up to five four-port trunks per switch including expansion units, each combining up to four 100BaseTX or 1000BaseX ports into a full duplex fat pipe
- Optional stack module for connecting up to six OS-6124 units, or three OS-6148, or a mix of OS-6124 and OS-6148 linking up to 172 ports via a 4 Gbps stack backplane
- Optional redundant stacking loop for continuous packet forwarding
- Prevents packet loss with back pressure and 802.3x flow control
- Supports Spanning Tree algorithm for more reliable network communications
- Supports standard 802.1Q VLAN tagging for interoperability with standards-compliant switches
- Supports 802.1p and Differentiated Services Code Point (DSCP)[2] for multi-media or real-time applications
- Provides IP multicast snooping for real-time multicast applications such as video conferencing or streaming audio
- Port mirroring for monitoring traffic crossing any port in real time
- Provides wide range of management tools – SNMP/RMON and Web agents, out-of-band console connection, and Telnet

Benefits

High network availability

Alcatel understands the importance of high network uptime. That is why the OmniStack 6124 and 6148 distributed switching fabric and redundant stacking loop forwards packets even when individual switching units fail. The OmniStack 6124 and 6148 also supports an external backup power supply. In addition, it can connect to network backbone switches via redundant gigabit uplinks. The Alcatel OmniStack 6124 /6148 supports an optional redundant management module that increases the reliability of the entire stack. Together, these features achieve a dial-tone standard of excellence that is critical to successful data and voice convergence in the enterprise.

Convergence ready

Whether you need to differentiate services for data applications or implement VoIP, your network infrastructure must be ready to prioritize real time traffic. Even as layer 2 switches, the OS-6124/OS-6148 support traffic allocation to CoS based on 802.1p and DSCP[2]. This allows easy implementation and easy to manage end-to-end QoS throughout the network. Add the Alcatel OmniPCX 4400 and Alcatel's Reflexes™ IP phones and you have the best converged network solution available!

Adaptive networking

As networks grow or migrate to converged data and voice networks, technical infrastructures must scale to support upgrade requirements. When the number of users increase, the OmniStack 6124 and 6148 facilitate a smooth upgrade path by simply adding units and high speed stacking links. 10/100 ports can also be aggregated to create a high-speed link to a server or network backbone. Up to four full duplex 10/100 ports can be aggregated gradually to create an 800 Mbps pipe. A distributed switching fabric guarantees enough power for wire-speed switching.

OmniStack 6124 and 6024[3] are interoperable and can be mixed in a single stack, thereby protecting the existing investment in Alcatel switching products. This interoperability allows gradual migration to a full OmniStack 6124/6148 stackable configuration with the benefits of advanced technology.

Simplified management

Simplifying network management decreases the cost of ownership. Using industry standard SNMP traps and RMON probes, OmniStack 6124 and 6148 provide strong supervision and easy configuration through a Web-based management interface. Management is optimized via the Alcatel converged network management platform, OmniVista 2000, which is compatible with leading products like HP OpenView and Computer Associates Network IT.

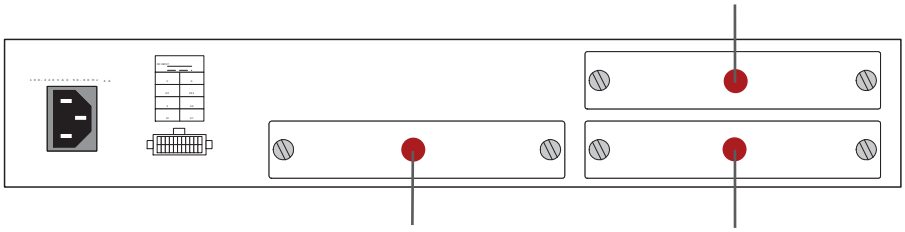
[2] Release 3.1

[3] Release 2.5 required. Contact your Alcatel representative for stacking configuration options

OmniStack 6124/6148 Base Switching Unit

Management module slot

Accommodates the OS-6124-MGT-KIT or OS-6148-MGT-KIT module. At least one management module is required per standalone base-unit or per stack



Optional module slot #2

Supports the following modules:

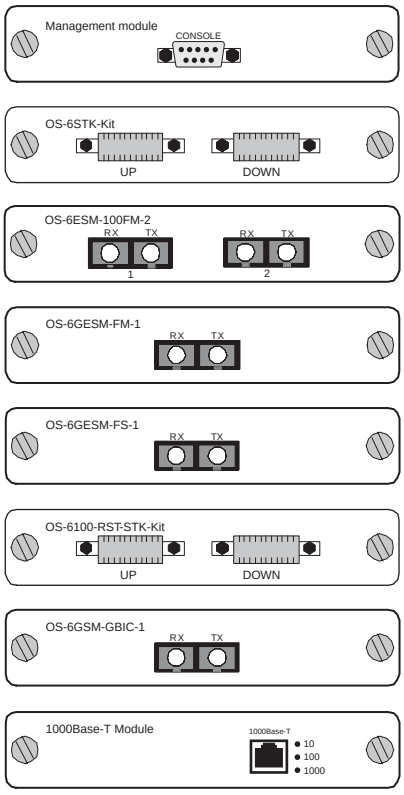
OS-6ESM-100FM-2
OS-6GSM-FM-1
OS-6GSM-FS-1
OS-6GSM-GBIC-1
OS-6STK-Kit
OS-6100 RST-Kit

Optional module slot #1

Supports the following modules:

OS-6ESM-100FM-2
OS-6GSM-FM-1
OS-6GSM-FS-1
OS-6GSM-GBIC-1
OS-6GSM-T-1

OmniStack 6124/6148 Sub-modules



OS-6124 MGT-Kit, or **OS-6148 MGT-Kit** Management module with console connector and console cable.

OS-6STK-Kit Stacking module with one “up” and one “down” stacking connector. Each stacking kit includes one short distance stacking cable.

OS-6ESM-100FM-2 100BaseFX module, two ports, 100 Mbps, multimode fiber, SC connectors.

OS-6GSM-FM-1 Gigabit module, one port, 1000BaseSX, multimode fiber, SC connector.

OS-6GSM-FS-1 Gigabit module, one port, 1000BaseLX, singlemode fiber, SC connector.

OS-6100-RST-STK-Kit Redundant stacking loop module with two “down” stacking connectors to create a redundant stack. Each redundant stacking kit includes one long distance stacking cable.

OS-6GSM-GBIC-1 Gigabit module, one port, GBIC connector. GBIC transceiver (SX, LX, or LH) must be ordered separately.

OS-6GSM-T-1 Gigabit module, one 1000BaseT port, RJ-45 connector.

The OmniStack Family

OmniStack 6100 Series is the latest addition to the OmniStack product family. The OmniStack 6124 and 6148 delivers a full feature set at an attractive price. For additional advanced network services at the edge of the network, the OmniStack 4024 or 5024-L3 supports distributed security, policy-based and authenticated VLANs. That's superior value-added service for an enterprise network.

OmniStack Model Features	1024	4024	5024-L3	6124	6148	8008
Port rate	10M	10/100M	10/100M	10/100M	10/100M	1000M
100BaseFX uplinks	▼	▼	▼	▼	▼	
ATM uplink			▼			
Gigabit uplink		▼	▼	▼	▼	▼
Stackable				▼	▼	
VLANs	▼	▼	▼	▼	▼	▼
Authentication		▼	▼			
IP/IPX routing		▼	▼			
L2/L3 Prioritization*		▼	▼	▼*	▼*	▼

* All models support L2 prioritization; the 6124 and 6148 supports L2 and L3 prioritization

OmniStack 1024

10BaseT switching, 100BaseTX, 100BaseFX fixed uplinks

OmniStack 4024

10/100BaseTX switching, 100BaseTX, 100BaseFX, 100BaseSX fixed uplinks

OmniStack 5024-L3

10/100BaseTX switching, modular uplinks

OmniStack 6124

10/100BaseTX switching, modular uplinks, stackable

OmniStack 6148

10/100BaseTX switching, modular uplinks, stackable

OmniStack 8008

1000BaseSX

OmniStack 6100 Specifications

Physical Characteristics

Ports
OS-6124: 24 10BaseT/100BaseTX RJ-45 ports
OS-6148: 48 10BaseT/100BaseTX RJ-45 ports

Uplink modules
Two 100BaseFX fiber ports, one 1000BaseSX/LX GE port, one 10/100/1000BaseT, one 1000BaseSX/LX/LH GBIC port, and stacking and redundant stacking loop modules

Stack interface (via stack modules)
Stack up to six (OS-6124) units at 4 Gbps stacking interlinks per unit
Stack up to three (OS-6148) units at 4 Gbps stacking interlinks per unit

Dimensions
17.37 x 12 x 2.53 in (44.0 x 30.5 x 6.4 cm)

Weight
OS-6124: 10.60 lbs (4.82 kg)
OS-6148: 10.93 lbs (4.96 kg)

Input power: 110~230 VAC, 47 to 63 Hz

Power consumption/dissipation
OS-6124: 70 Watts maximum; 239 BTU/hr maximum
OS-6148: 80 Watts maximum: 273 BTU/hr maximum

Maximum input current: 110 VAC – .80A or 240 VAC – .50A

Technical Summary

Switch processing scheme: Store-and-forward

Address table: 8,000 entries

Queue buffer: 24K bytes per 10/100 Mbps port, two million bytes per 1000 Mbps port

Flow control: Back pressure for half duplex, IEEE 802.3x for full duplex

Broadcast suppression: Discards broadcasts at a critical threshold

Fault tolerance: Socket included on rear panel for attaching a redundant power supply

Network Management

System configuration: Console port, Telnet, Web browser, OmniVista 2000, SNMP

Management agent: SNMP support: MIB II, bridge MIB, Ethernet MIB, RMON MIB, and private MIB

RMON: Groups 1, 2, 3, 9 (statistics, history, alarm, and event)

Spanning Tree algorithm: IEEE 802.1d provides redundant link support

Port-based or 802.1Q VLANs: Up to 256 groups

IP multicast switching: IGMP snooping

Link aggregation
OS-6124: Five trunks with up to four ports per trunk per unit, or 12 trunks with up to four ports per trunk per 6124 stack

OS-6148: Five trunks with up to four ports per trunk per unit, or 12 trunks with up to four ports per trunk per 6148 stack

Port mirroring: 10/100 Mbps and 1000 Mbps port mirroring

Traffic prioritization: Supports two levels of priority

Standards Compliance

OmniStack 6124

CE Mark
EN50081-1: EN55022 Class A
EN50082-1: IEC 1000-4-2/3/4/6)
EN60555-2 Class A
EN60555-3

Emissions
FCC Class A
VCCI Class A
CISPR Class A

Safety
CSA/NRTL (UL1950, CSA 22.2.950)
TUV/GS (EN60950)

Immunity
EN 55024
IEC 61000-4-2/3/4/5/6/8/11

Temperature
IEC 68-2-14
Standard operating: 32~122˚ F (0~50˚ C)
Storage: -40~158˚ F (-40~70˚ C)

Humidity: 10% to 90% (non-condensing)

Vibration: IEC 68-2-36, IEC 68-2-6

Shock: EC 68-2-29

Drop: IEC 68-2-32

Standards IEEE
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX and 100BaseFX
IEEE 802.3z 1000BaseSX
IEEE 802.3ab 1000BaseT
IEEE 802.3x flow control support
IEEE 802.1p Priority support
IEEE 802.1D (Bridging), 1993
IEEE 802.1Q (Virtual LAN) 1998
IEEE 802.3ac frame extension for VLAN tagging

OmniStack 6148

CE Mark
EN50081-1: EN55022 Class A
EN50082-1: IEC 1000-4-2/3/4/6)
EN60555-2 Class A
EN60555-3

Emissions
FCC Class A
VCCI Class A
CISPR Class A

Safety
CSA/NRTL (UL1950, CSA 22.2.950)
TUV/GS (EN60950)

Immunity
EN 55024
IEC 61000-4-2/3/4/5/6/8/11

Temperature
IEC 68-2-14
Standard operating: 32~122˚ F (0~50˚ C)
Storage: -40~158˚ F (-40~70˚ C)

Humidity: 10% to 90% (non-condensing)

Vibration: IEC 68-2-36, IEC 68-2-6

Shock: EC 68-2-29

Drop: IEC 68-2-32

Standards IEEE
IEEE 802.3 10BaseT
IEEE 802.3u 100BaseTX and 100BaseFX
IEEE 802.3z 1000BaseSX
IEEE 802.3ab 1000BaseT
IEEE 802.3x flow control support
IEEE 802.1p Priority support
IEEE 802.1D (Bridging), 1993
IEEE 802.1Q (Virtual LAN) 1998
IEEE 802.3ac frame extension for VLAN tagging

Ordering Information

Model Number	Description
Base units	
OS-6124	**OmniStack 6124 Base switching unit.** The base switching unit supports 24 ports 10/100BaseTX, one management slot, 2 optional module slots, 8K MAC addresses. Requires one management module to work as standalone unit. Up to 6 OS-6124 can be stacked. One management module at least per stack, a second management module for optional redundancy. User manuals, power cord and rack mount brackets are included.
OS-6148	**OmniStack 6148 base switching unit.** The base switching unit supports 48 10/100BaseTX ports, one management slot, 2 optional module slots, 8K MAC addresses. Requires one management module to work as standalone unit. Up to 3 OS-6148 can be stacked. One management module at least per stack, a second management module for optional redundancy. User manuals, power cord and rack mount brackets are included.
Management modules	
OS-6124-MGT-Kit	**Management module for OS-6124.** The management module supports 2 MB of flash and 8 MB of DRAM. Includes switch software and console cable.
OS-6148-MGT-Kit	**Management module for OS-6148.** The management module supports 4 MB of flash and 16 MB of DRAM. Includes switch software and console cable.
Stack module	
OS-6STK-Kit	**Stacking kit for OS-6124.** Includes one stacking module and one stacking cable. Should be ordered with each OS-6124 in a stack configuration.
OS-6100-RST-Kit	**Redundant stacking loop kit for OS-6124.** Includes one redundant stacking loop module and one extended stacking cable. One redundant stacking loop kit should be ordered per stack configuration to enable stacking loop. Use in place of the stacking kit in the top OS-6124 unit in the stack.
Fiber optic module	
OS-6ESM-100FM-2	**OmniStack 6124 and 6024 100BaseFX module**, 2 ports, 100Mbps, multimode fiber, SC connectors.
Gigabit uplink modules	
OS-6GSM-FM-1	**OmniStack 6124 and 6148 Gigabit module,** 1 port, 1000BaseSX, multimode fiber, SC connectors.
OS-6GSM-FS-1	**OmniStack 6124 and 6148 Gigabit module,** 1 port, 1000BaseLX, single mode fiber, SC connectors.
OS-6GSM-GBIC-1	**OmniStack 6124 and 6148 GBIC module,** 1 port, GBIC connector. GBIC transceiver must be ordered separately.
OS-6GSM-T-1	**OmniStack 6024, 6124 and 6148 Gigabit module,** 1 port, autosensing 10/100/1000BaseT, RJ45 connector. Requires Cat5 or Cat5e quality grade cabling, maximum length 100m.
GBIC transceivers	
GBIC-LH-70	**1000BaseLH GBIC** – Gigabit Interface Converter. Extra long distance (up to 70 km) over SMF.
GBIC-LX	**1000BaseLX GBIC** – Gigabit Interface Converter. Long distance - 5 km over SMF
GBIC-SX	**1000BaseSX GBIC** – Gigabit Interface Converter. Short distance MMF - 220 m on 62.5/125 um multimode fiber and 500 m on 50/125 um multimode fiber.
Redundant power supply	
RDP-150-AC	**150 Watt redundant power supply** for OS-6124 and OS-6148

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